OPEN ACCESS Freely available online

ISSN: 2329-891X
Journal of Tropical Diseases & Public Health

Perspective

Transmission, Nutritional Effects and Morbidity of Helminth Infections

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DESCRIPTION

The poorest and most neglected communities are among those affected by soil-transmitted helminth infections, which are among the most prevalent illnesses worldwide. They are spread via eggs found in human faeces, which then pollute the soil in unsanitary regions.

The three main types of worms that infect people are hookworms, whipworms, and roundworms (Ascaris lumbricoides) (Necator americanus and Ancylostoma duodenale). Due to their shared diagnostic requirements and therapeutic responses, many STH species are typically treated collectively.

Strongyloides stercoralis is an intestinal helminth with unusual traits; as a result, it usually goes undiagnosed since it requires different diagnostic techniques than other helminthiases that are spread through soil. Additionally, the parasite is not susceptible to albendazole or mebendazole, therefore large-scale preventive treatment efforts aimed at other soil-transmitted helminthiases have little effect on it.

Transmission

Eggs that are transferred in the faeces of infected people are what cause soil-transmitted helminths to spread. Adult worms lay hundreds of eggs daily in the colon where they reside. These eggs infect the soil in places with poor sanitation. This can happen in several ways:

- When vegetables are not carefully cooked, washed, or peeled, eggs that are adhering to the vegetables are ingested;
- Consumption of eggs from tainted water sources;
- Children who play in polluted soil and then put their unwashed hands in their mouths consume eggs.

Additionally, hookworm larvae that develop into a form that can actively pierce the skin are released when their eggs hatch in the soil. The main way that people contract hookworm is by going barefoot on the contaminated ground.

Due to the fact that feces-passed eggs must mature in the soil for about 3 weeks before they become infectious, there is no direct person-to-person transmission of the disease from fresh faeces.

A. lumbricoides, *T. trichiura* and hookworms do not grow in the human host, re-infection happens only as a result of contact with infective stages in the environment. *S. stercoralis* can reproduce in the host and in immunocompromised individuals, its uncontrolled proliferation can be fatal.

Nutritional effects

Soil-transmitted helminths damage the nutritional status of the people they infect in various ways.

- Iron and protein are lost as the worms feed on host tissues like blood.
- Chronic intestinal blood loss brought on by hookworms can also induce anaemia.
- The worms make it harder for nutrients to be absorbed. Additionally, it's possible that roundworms will fight for vitamin A in the intestine.
- Some soil-transmitted helminths may result in appetite loss, which lowers nutrient intake and physical activity specifically and diarrhoea are two symptoms of trichiura.

Morbidity and symptoms

Morbidity is inversely proportional to the number of worms present. People who have light infections (few worms) typically don't experience any symptoms. Malnutrition, overall malaise and weakness, intestinal signs (diarrhoea and abdominal discomfort), and poor growth and physical development are just a few of the symptoms that heavier infections can bring on.

Intestinal blockage brought on by particularly severe infections may require surgical treatment.

S. Stercoralis is recognised to be connected to childhood chronic malnutrition and has been linked to dermatological and gastrointestinal illness. The hyperinfection condition, which the parasite can induce in cases of lowered host immunity, is always

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Received: 02-Aug-2022, Manuscript No. JTD-22-17996; **Editor assigned:** 05-Aug-2022, PreQC No. JTD-22-17996 (PQ); **Reviewed:** 22-Aug-2022, QC No. JTD-22-17996; **Revised:** 29-Aug-2022, Manuscript No. JTD-22-17996 (R); **Published:** 05-Sep-2022, DOI:10.35241/2329-891X.22.10.342.

Citation: Rehman H(2022) Transmission, Nutritional Effects and Morbidity of Helminth Infections. J Trop Dis. 10:342.

lethal if not promptly and appropriately treated and frequently proves fatal in spite of treatment.